

# IACS Working Group on Debris Covered Glaciers

## Status report for the period September 2022 – June 2023

Lindsey Nicholson, Francesca Pellicciotti, and David Rounce

This is the fifth and final report of the WG, which was established in September 2018 aiming to advance our ability to map debris thickness, identify model complexity required to estimate sub-debris melt, and coordinate knowledge exchange on debris-covered glaciers. The reason for the extension through 2023 was largely due to the pandemic affecting progress in previous years.

### 1) **Melt model intercomparison:**

The multi-author publication (led by Francesca Pellicciotti) compares 14 sub-debris melt models over multiple locations and climatic zones. The paper, co-led by Adria Fontrodona Bach, has more than 30 co-authors who contributed either models or data or both in 2019; after which, two iterations on drafts were conducted with all co-authors bringing the draft close to submission. Unfortunately, progress stalled over the last year due to personnel having other commitments and thus not having time to devote to finalizing the study. However, we remain hopeful that the paper can be submitted after the working group has concluded and the co-leads are planning to make this a priority in August.

### 2) **Working group status and meetings:**

No additional effort was made with respect to internal WG meetings or members. Our final membership thus included 67 members, coming from 18 nations, with 1/3 of the members being female. The working group effort will culminate by convening a session focused on debris-covered glaciers at IUGG.

### 3) **UNESCO manual on field measurements on debris-covered glaciers**

The next round of panel discussions was planned before this summer but with too many scheduling conflicts this is now pushed into autumn. The leads on this (Jakob Steiner and Cat Fyffe) are working on the last chapters and will continue to communicate progress with IACS after the completion of this Working Group. The manual is hoped to be released sometime in 2024.

### 4) **Data sharing platform and planned publication:**

The shared zenodo data community now has 35 datasets, some of which are themselves larger community collections (<https://zenodo.org/communities/iacswgondcgs/>). A list of >100 further datasets that the community wishes to make freely available on this platform was collected but are to be added by individual authors when they can. We hope that this platform will continue to be a resource for future datasets from the community after our working group is completed.

### 5) **Debris thickness mapping**

A decision was made to no longer pursue this effort in 2022.

### **Funding aspects:**

No money has been spent nor is any money planned to be spent.

### **Closing out the Working Group:**

This report marks the end of Phase I of the working group. We would like to express our appreciation for the support from IACS over the years. Last year, Francesca Pellicciotti submitted an addendum for Phase II on behalf of new co-leads, which is currently planned to be Francesca Pellicciotti, Duncan Quincey, and a yet-to-be-identified early-career scientist. Further communication of this effort will be taken up separately between IACS and the new leads.